The Public Health Information Network Messaging System

Tim Morris
Director, Division of Informatics Shared Services (DISS)
National Center for Public Health Informatics (NCPHI)
Centers for Disease Control and Prevention (CDC)

Overview

- PHIN Messaging System
- Secure and Reliable Messaging – Overview
- Direct-Send vs. Route-not-Read

PHINMS Mission

- To support applications sending public health data across the PHIN network which help accomplish CDC's mission:
  - Preventing & controlling disease
  - Preparedness & emergency response
- By providing these applications a common platform for secure message transport that is:
  - Secure, reliable, easy to use, easy to support
  - "Well" performing, "feature-rich"
  - "De-facto" standard for secure message transport
  - Available at no cost to users

What is PHINMS?
(Business Perspective)

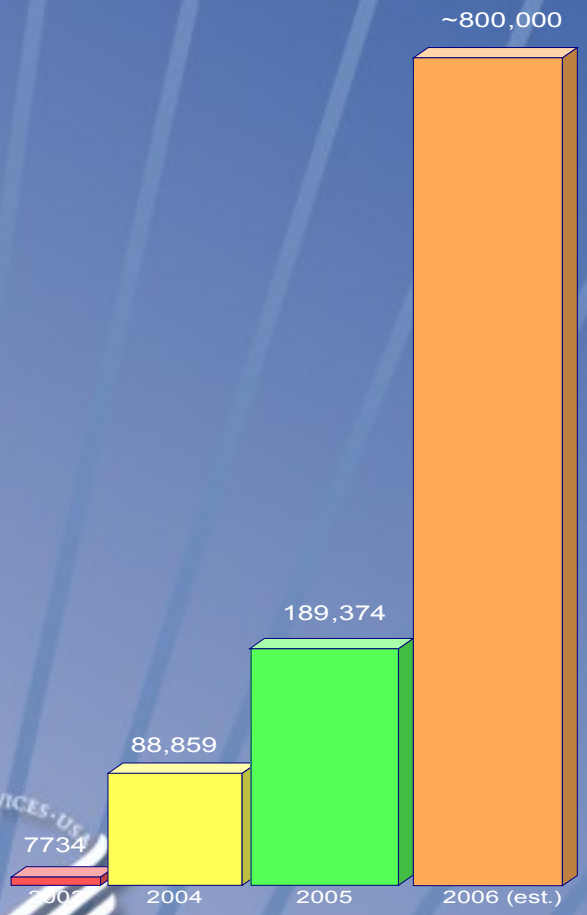
- Secure, reliable message transport
- Used by PH agencies to send data to CDC
- Applications using PHINMS include: BioSense, ELR, LRN, NBS, HCN, NND, NHSN
- Some states using PHINMS internally: NYS, NYC, MN, OK, CA
- 4-year old product deemed “mission critical” by CDC

What is PHINMS?
(Technical Perspective)

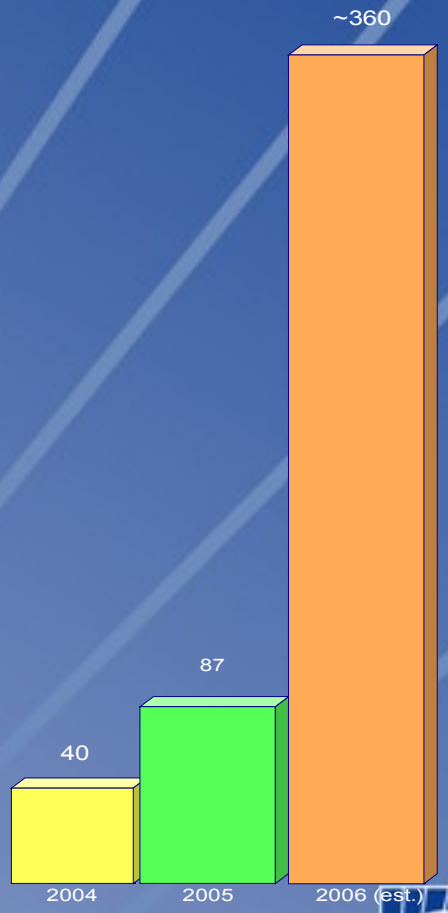
- CDC's implementation of the ebXML 2.0 messaging standards
- Runs on Windows, Linux, Solaris (platform independent)
- Can be used by any application that can write and read database tables (language independent)

PHINMS Usage

Increase in PHINMS Messages



Increase in PHINMS Senders



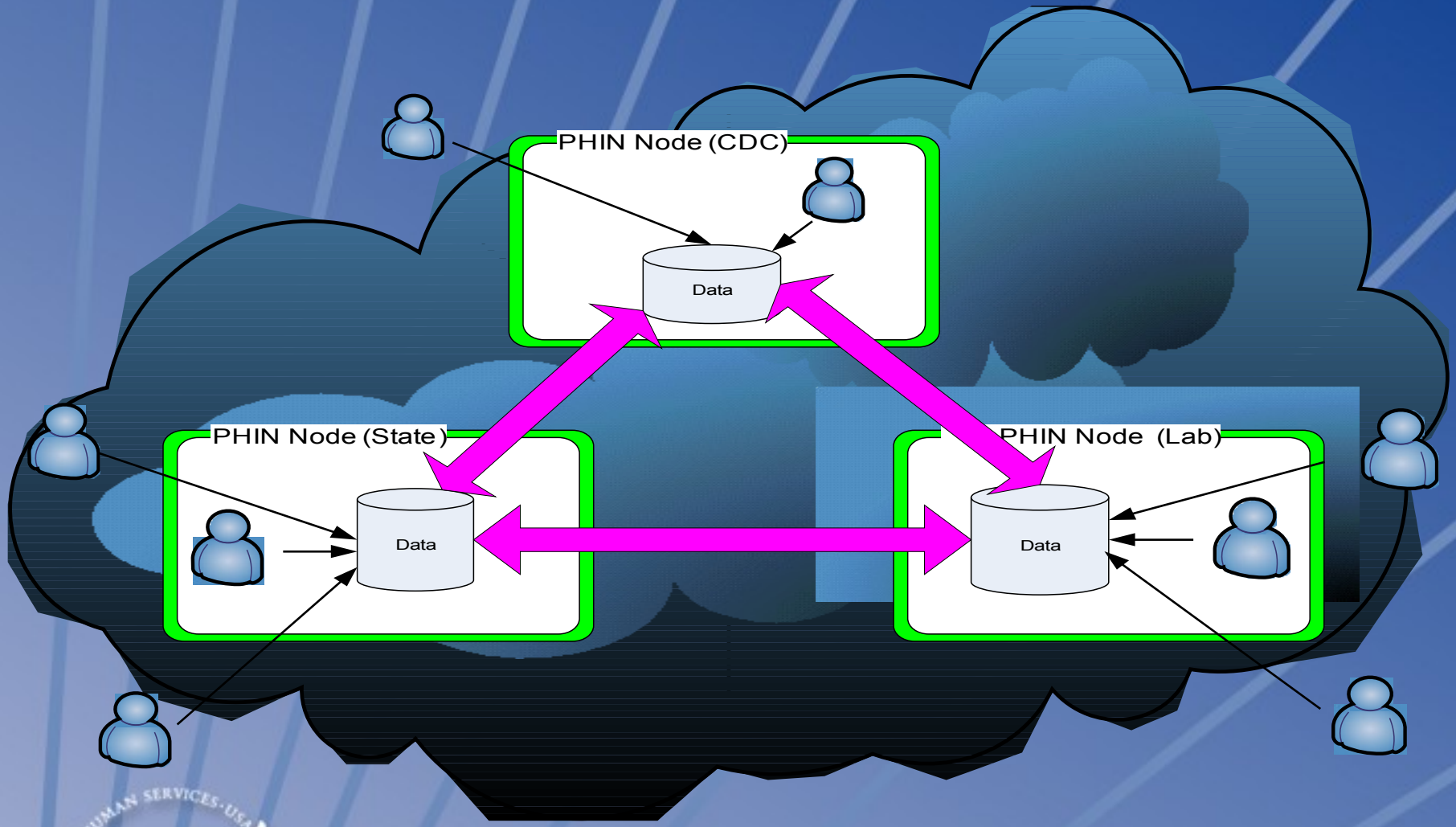
PHINMS Roadmap

- Version 2.1: Core Transport System (June '03)
- Version 2.5: Deployment engine (Tomcat), Graphical configuration, chunking (May '05)
- Version 2.6: Upgrade wizard, enhanced feature set (Feb '06)
- Version 2.7: Transport Folder "polling", Auto email upon fatal sender error, Registry lookup (Fall '06)

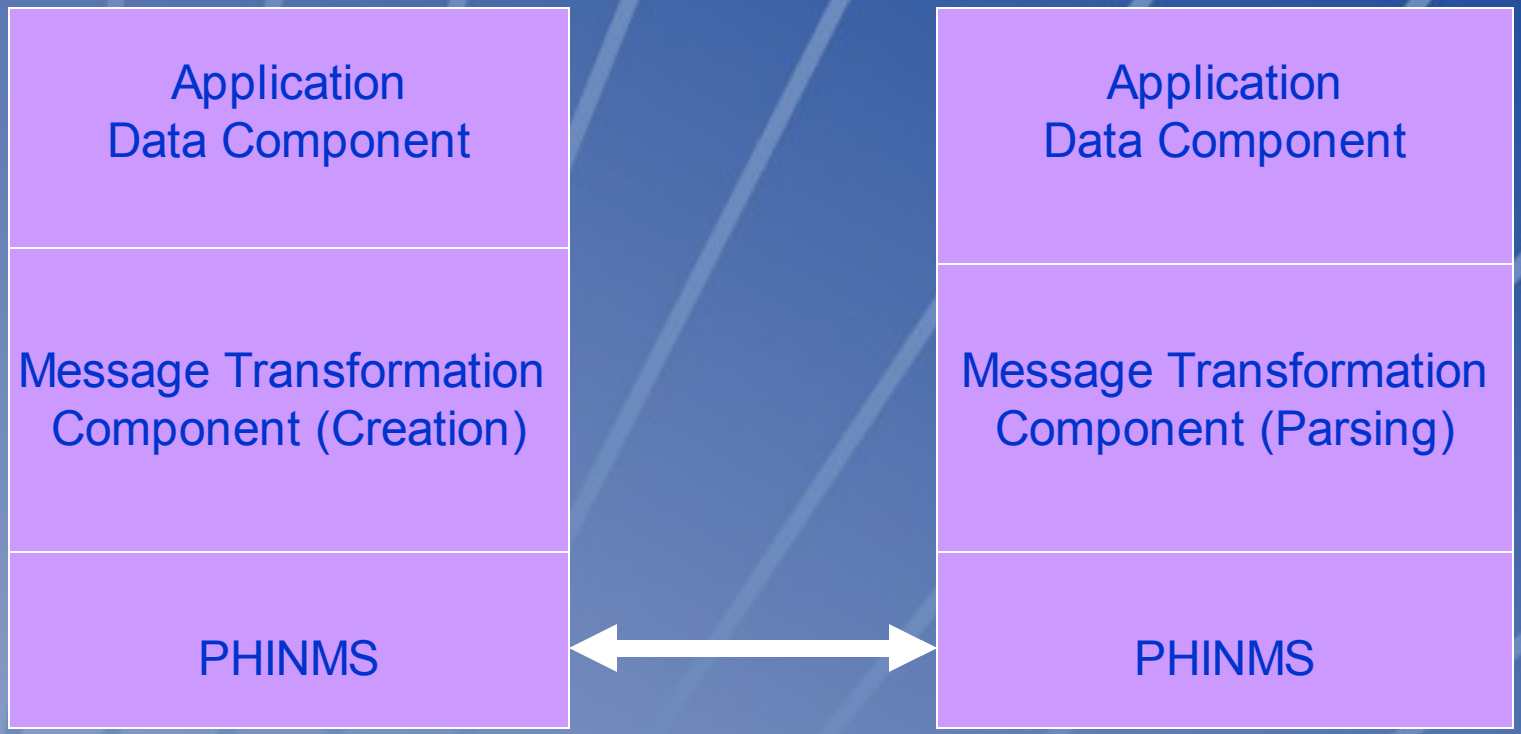
What is ebXML? (www.ebxml.org)

- ebXML Messaging Service is a robust messaging framework for commerce
- Can send all types of files, not just XML
- HL7 has proposed an ebXML DSTU (Draft Standard for Trial Use) as a transport mechanism for all HL7 messages.

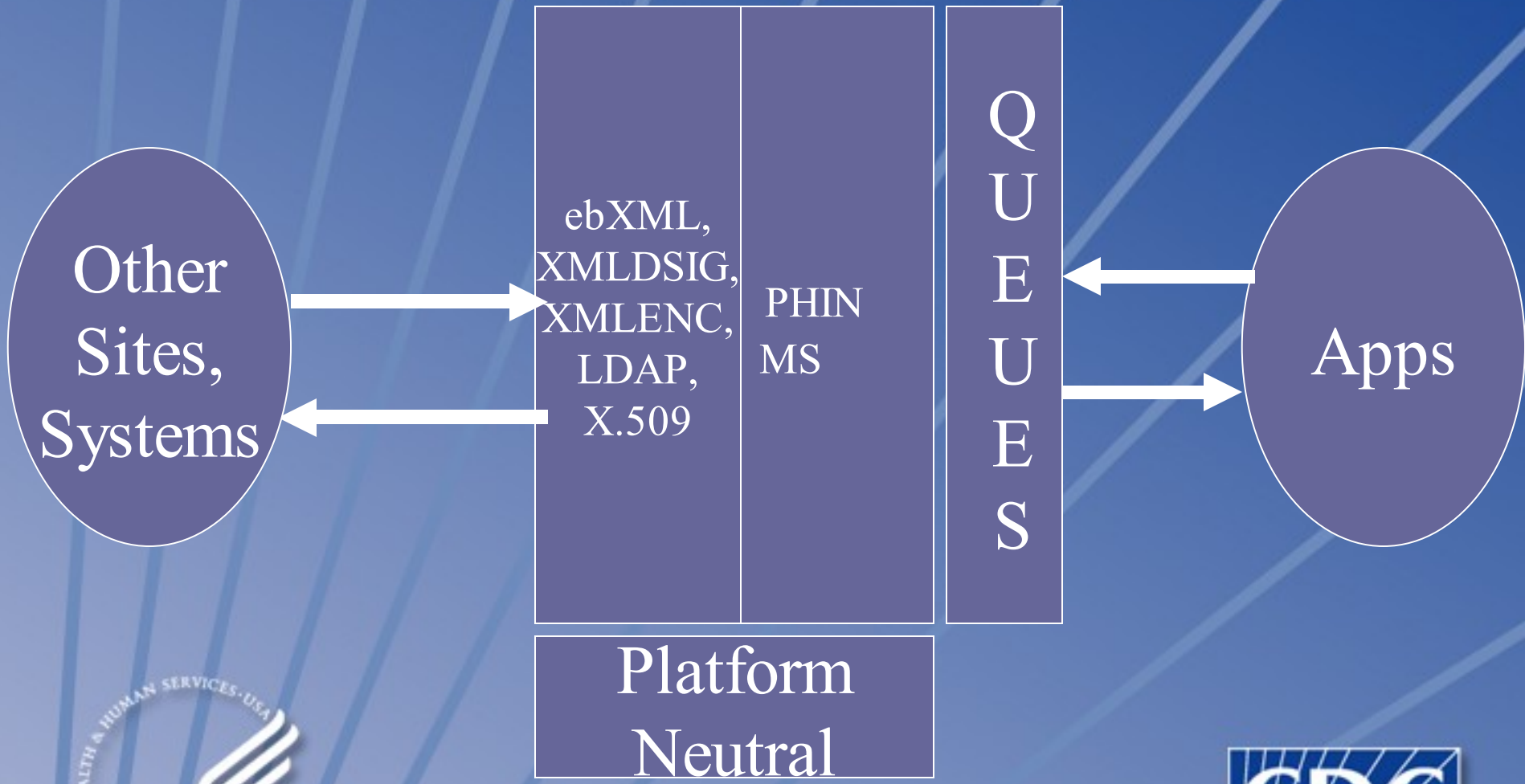
PHIN - Operational Environment



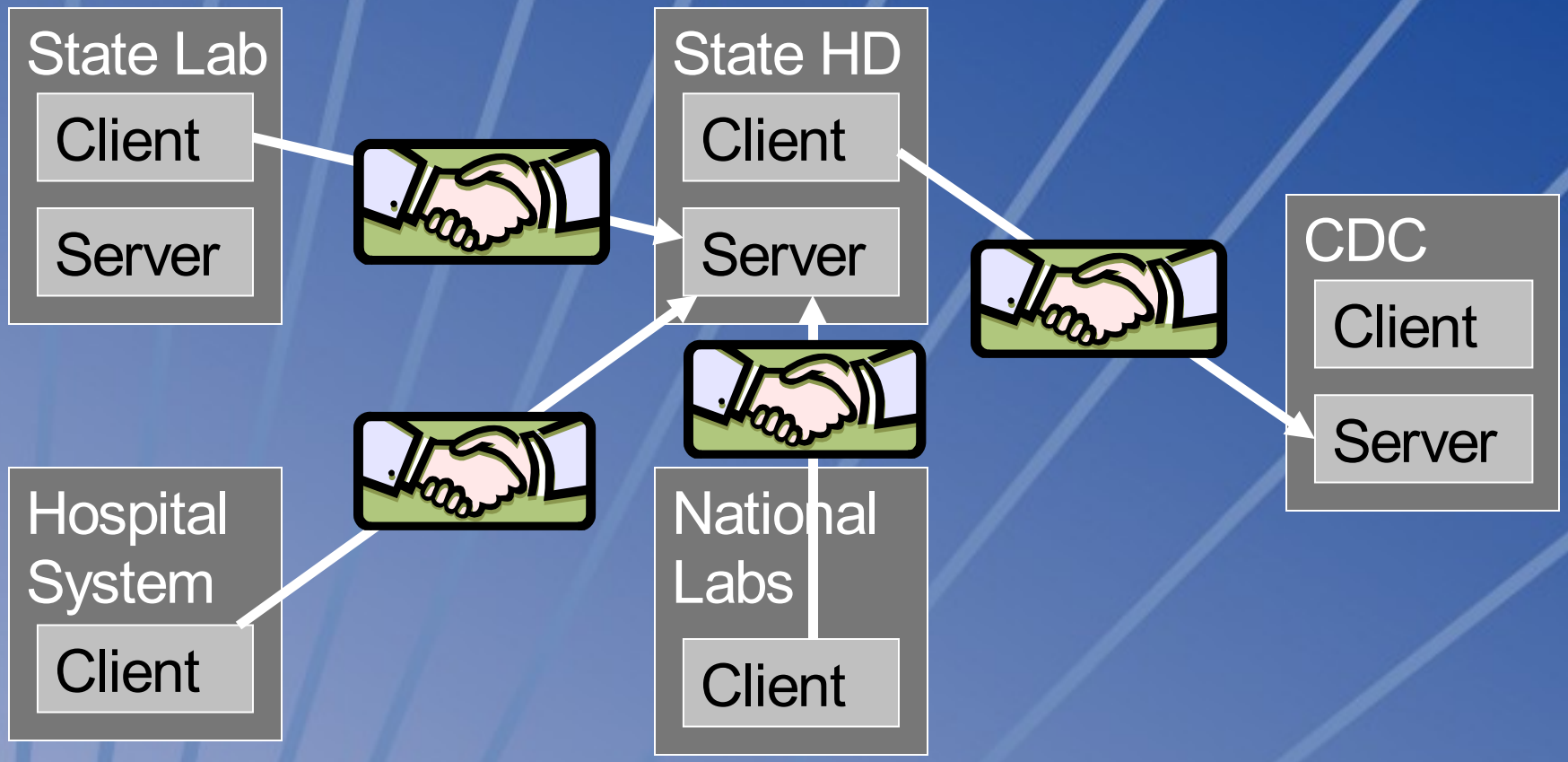
PHINMS – Placement within PHIN



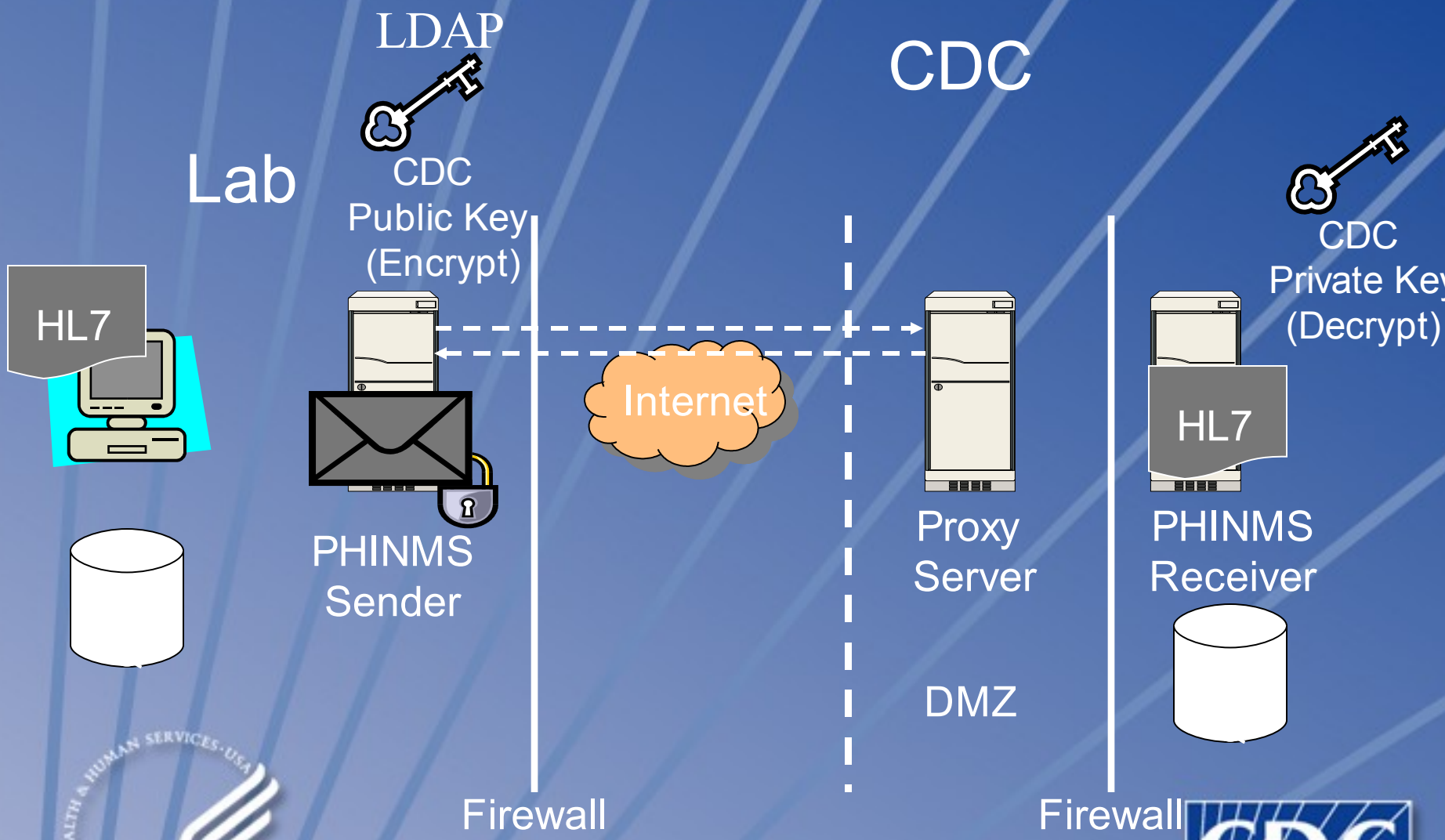
PHINMS Architecture



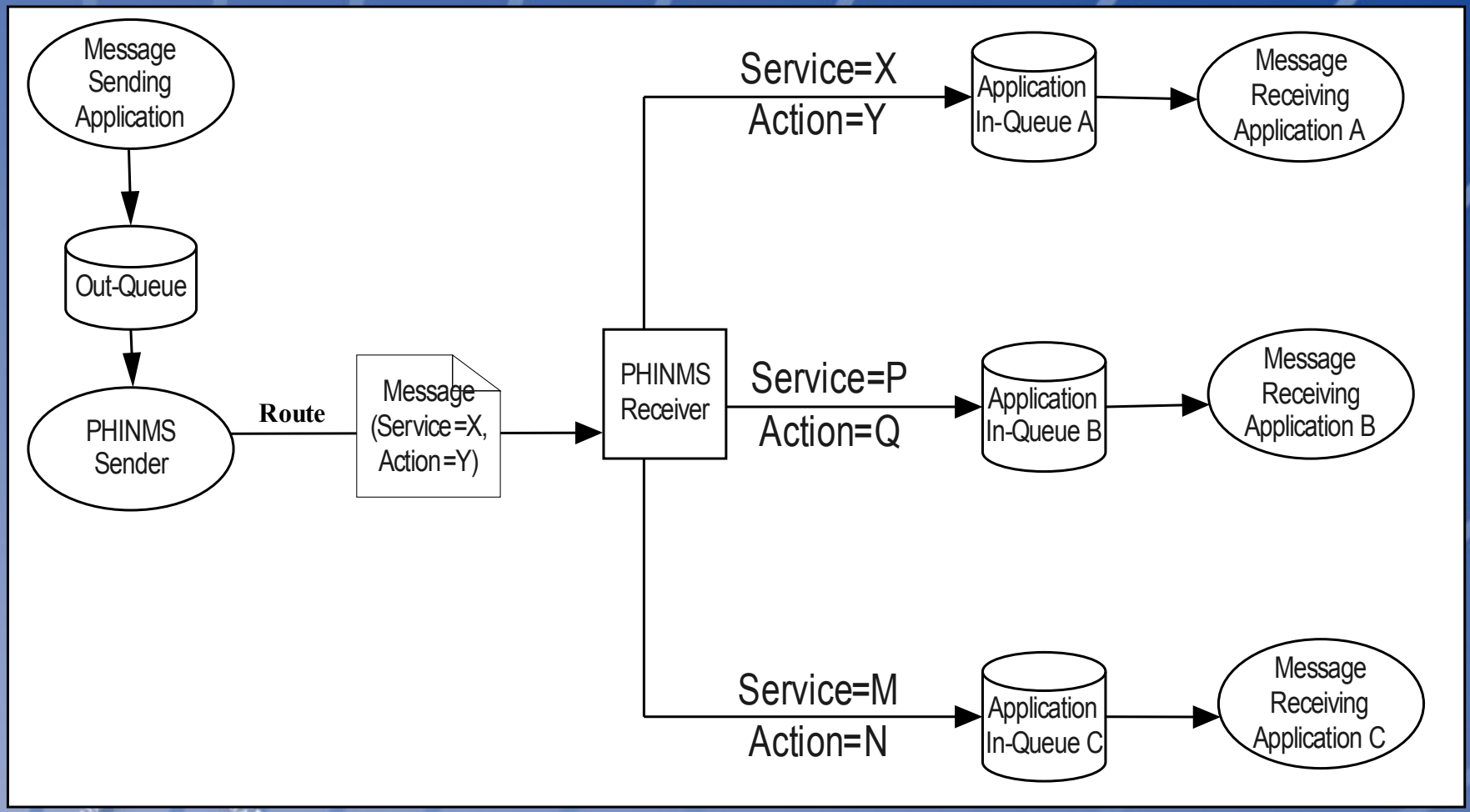
Business/Electronic Agreements, Trust, CPAs



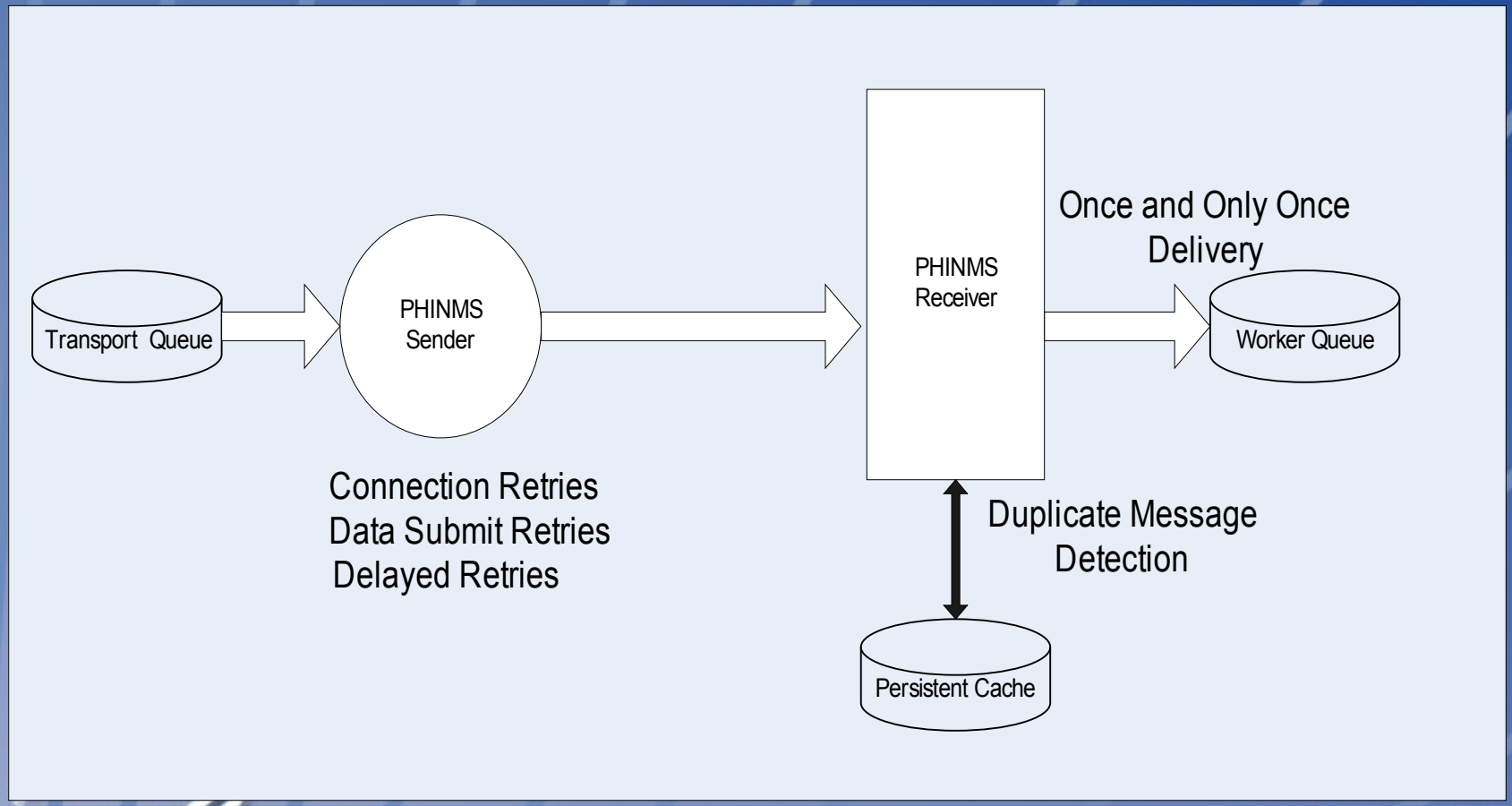
PHINMS – Message Flow



Message Routing



Reliable Messaging



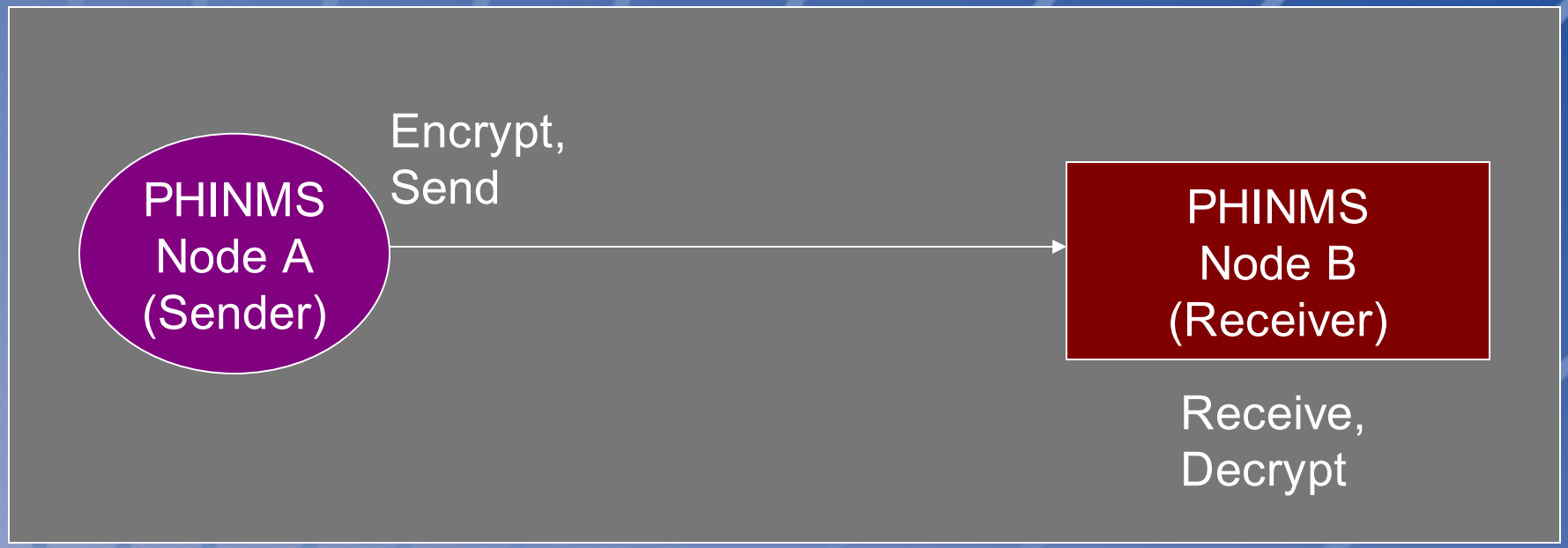
Message Chunking

- PHINMS Message Size limit <= 10Mb
- PHINMS Sender can be configured to send larger files in “chunks”
- Chunking is transparent to sending and receiving applications
- With chunking, PHINMS tested up to a 4 Gb file

Two Ways of Sending Data

- Direct- Send
  - Point to point transmission, no intermediary
  - Adv: very reliable, no single point of failure
  - Disadv: higher deployment + maint costs
- Route-Not-Read
  - Intermediary holds message w/o reading
  - Adv: lower deployment + maint costs
  - Disadv: single point of failure

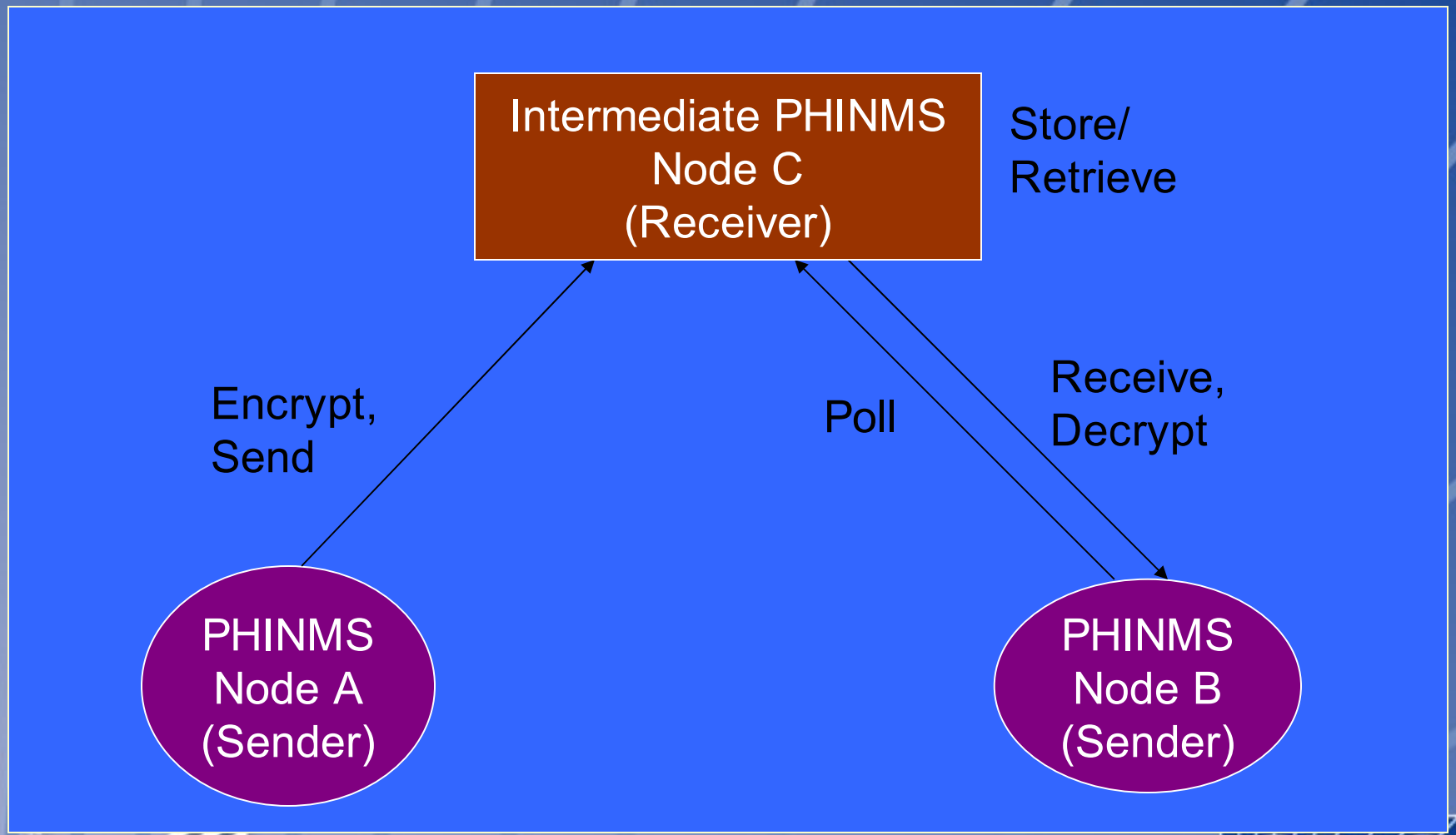
What is “Direct-Send”?



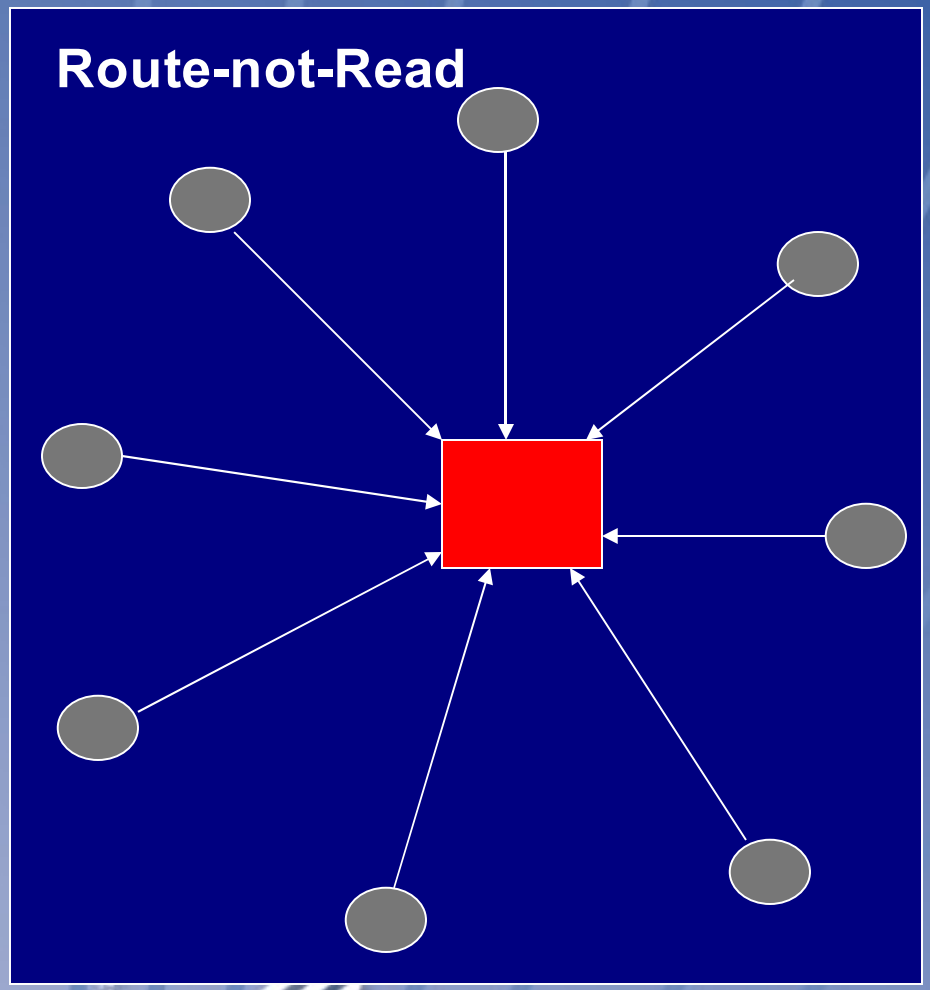
Impact on Deployment

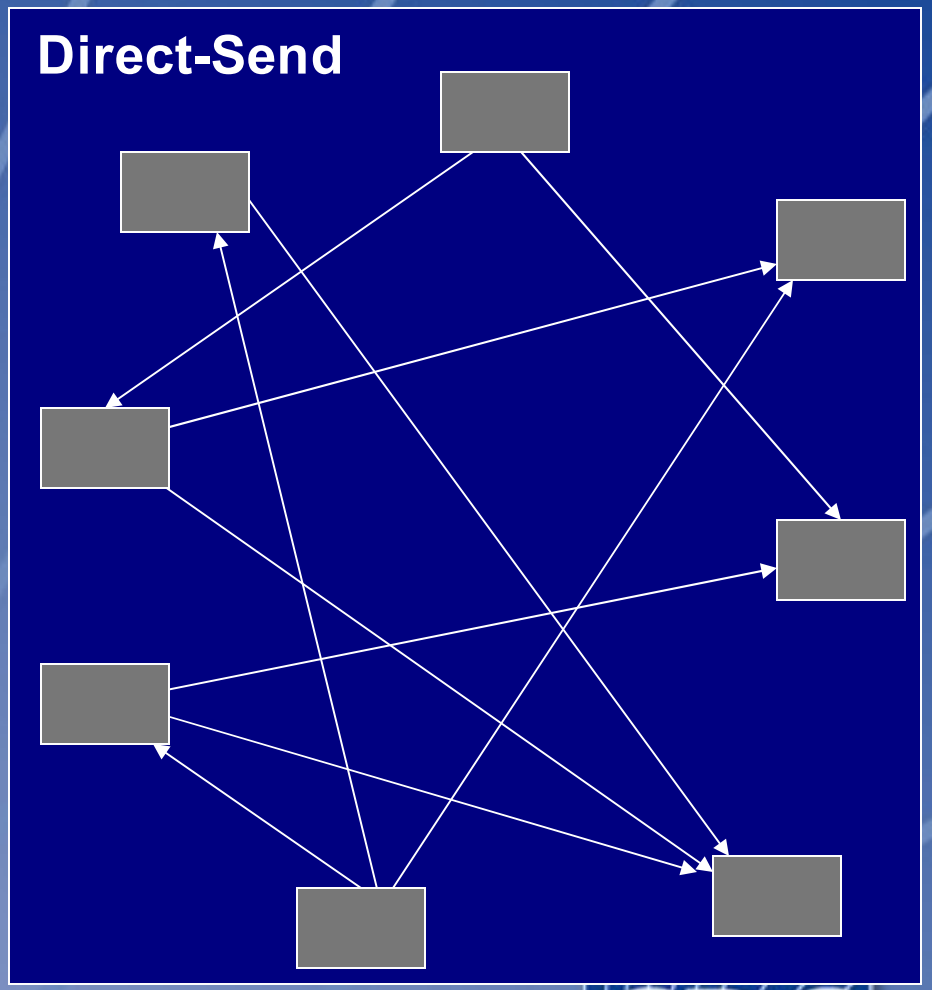
- At message sending end - minor
- At message receiving end - major

What is “Route-not-Read”?



Why is Direct-Send Better?

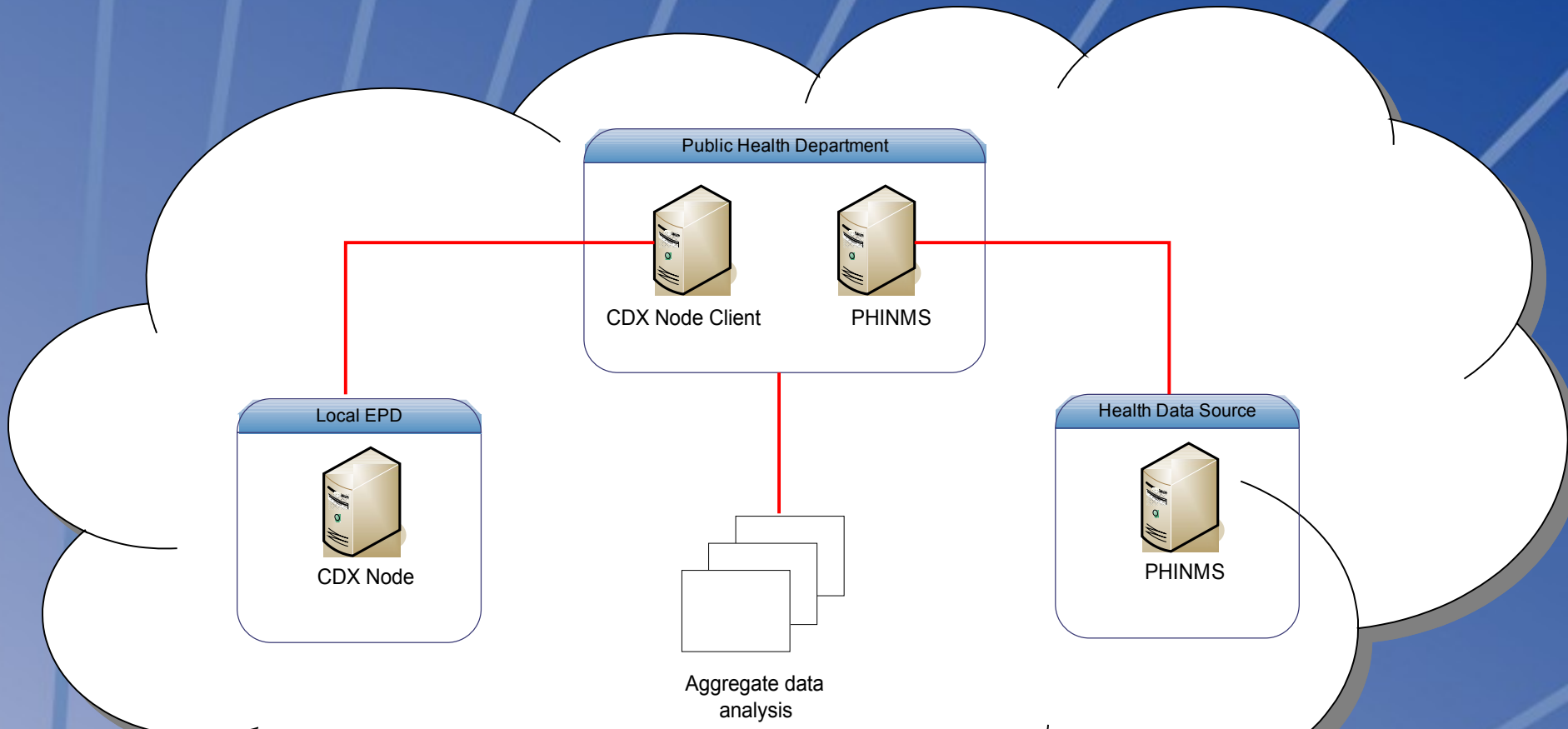




PHINMS and Tracking Network

- Many public health departments using PHINMS currently
- Transport of notifiable disease case messages sent to CDC via PHINMS
- Secure point to point messaging
- Tracking Network use depends on requirements
- Tracking network may require some grid query and some point to point
- Could use PHINMS for some data flows

PHINMS and Tracking Network



Questions?

http://www.cdc.gov/phin/phinms